In the Claims

1-10. (cancelled)

11. (currently amended) A piston accumulator, comprising:

an accumulator housing forming a cylindrical tube of magnetizable material and defining an axial direction along a longitudinal axis thereof, said housing having a gas space and a hydraulic fluid space;

a piston axially movable along a stroke path in said cylindrical tube and forming a movable separating element separating said spaces in said housing, said piston having radially smaller and larger circumferential sections spaced from and engaging said cylindrical tube, respectively, and having a radially extending shoulder surface extending between said smaller and larger circumferential sections, said smaller circumferential section located on an end of said piston opening on said gas space, said larger circumferential section defining an opposite end of said piston facing said fluid space;

a magnet arrangement mounted on and about said smaller circumferential section of said piston and generating a field on said cylindrical tube, said magnet arrangement including first and second annular rings of magnetizable material and a plurality of magnet elements with pole end surfaces between said annular rings with said pole end surfaces abutting said annular rings, said second annular ring being supported on said shoulder surface to support said magnet arrangement in a direction of said hydraulic fluid space; and

a magnet field sensor positioned in an exterior of said cylindrical tube and including a first Hall sensor generating signals representative of piston positions along said stroke path in response to said field generated by said magnet elements.

12. (previously presented) A piston accumulator according to claim 11 wherein

said magnet field sensor comprises a second Hall sensor mounted on said exterior of said cylindrical tube spaced an axial distance from said first Hall sensor.

13. (previously presented) A piston accumulator according to claim 11 wherein

said piston is of non-magnetizable material; and

said magnet elements are permanent magnets radially spaced from said smaller circumferential section of said piston and arranged in a row concentric with said longitudinal axis, said permanent magnets having same polarities relative to each other and having polar axes parallel to said longitudinal axis.

14. (previously presented) A piston accumulator according to claim 13 wherein

said permanent magnets are circular cylinders with said polar axes thereof along axes of said circular cylinders, and are spaced from one another at equal angular distances about a circumference of said piston.

15. (previously presented) A piston accumulator according to claim 14 wherein

said annular rings have exterior circumferential surfaces adjacent said permanent magnets radially spaced from said cylindrical tube and exterior circumferential surfaces remote from said

permanent magnets with exterior diameters approximating an interior diameter of said cylindrical tube forming pole shoes to introduce magnetic flux into said cylindrical tube.

16. (previously presented) A piston accumulator according to claim 15 wherein

a threaded ring is engaged with a threading on said piston to hold said annular rings together on said smaller circumferential section.

17. (previously presented) A piston accumulator according to claim 12 wherein

said Hall sensors are in axial positions corresponding to specific positions of said piston along said stroke path.

18. (previously presented) A piston accumulator according to claim 17 wherein

said specific positions correspond to end positions of said piston along said stroke path.

19. (currently amended) A piston accumulator according to claim 11 wherein

a sealing element is between and engages said second annular ring and said shoulder surface.

20. (currently amended) A piston accumulator, comprising:

an accumulator housing forming a cylindrical tube of magnetizable material and defining an axial direction along a longitudinal axis thereof, said housing having a gas space and a hydraulic fluid space;

a piston of non-magnetizable material axially movable along a stroke path in said cylindrical tube and forming a movable separating element separating said spaces in said housing, said piston having radially smaller and larger circumferential sections spaced from and engaging said cylindrical tube, respectively, and having a radially extending shoulder surface extending between said smaller and larger circumferential sections, said smaller circumferential section located on an end of said piston opening on said gas space, said larger circumferential section defining an opposite end of said piston facing said fluid space;

a magnet arrangement mounted on and about said smaller circumferential section of said piston and generating a field on said cylindrical tube, said magnet arrangement including first and second annular rings of magnetizable material and a plurality of magnet elements with pole end surfaces between said annular rings with said pole end surfaces abutting on said annular rings, said second annular ring abutting a sealing element on and engaging said shoulder surface to support and engage said magnet arrangement in a direction of said hydraulic fluid space, said magnet elements being permanent magnets radially spaced from said smaller circumferential section of said piston and arranged in a row concentric with said longitudinal axis, said permanent magnets having same polarities relative to each other and having polar axes parallel to said longitudinal axis, said permanent magnets being circular cylinders with said polar axes thereof along axes of said circular cylinders[[,]] and ~~are~~being spaced from one another at equal angular distances about a circumference of said piston, said annular rings having exterior circumferential surfaces adjacent said permanent magnets radially spaced from said cylindrical tube and exterior circumferential surfaces remote from said permanent magnets with exterior diameters approximating an interior diameter of said cylindrical tube forming pole shoes to introduce magnetic flux into said cylindrical tube; and

a magnet field sensor positioned in an exterior of said cylindrical tube and including a first Hall sensor generating signals representative of piston positions along said stroke path in response to said field generated by said magnet elements.

21. (previously presented) A piston accumulator according to claim 20 wherein

said magnet field sensor comprises a second Hall sensor mounted on said exterior of said cylindrical tube spaced an axial distance from said first Hall sensor.

22. (previously presented) A piston accumulator according to claim 20 wherein

a threaded ring is engaged with a threading on said piston to hold said annular rings together on said smaller circumferential section.

23. (previously presented) A piston accumulator according to claim 20 wherein

said Hall sensors are in axial positions corresponding to specific positions of said piston along said stroke path.

24. (previously presented) A piston accumulator according to claim 23 wherein

said specific positions correspond to end positions of said piston along said stroke path.